Before I left the classroom, I asked the science teacher, "May I bring my reference books for the test. I wrote it." He said, "Yes, I had seen it in your time period." I looked at him strange and asked, "How did you see it?" He said, "Well, before my escape and in a body born. Not made. I was the pharmacist. Remember what we did?" I replied, "I sure do. To keep from being put into the genetic database. It was a mandate of the government. You killed two intruders. Their DNA was not in the database. We put our papers in their pockets. Dragged them downstairs. I had to keep a swarm of tiny drones off of me as I ran to your shop. If I remember correctly. The shop was blown sky high with my help and a few propane tanks under the store. The fire burned for days. We listened to it on my radio. They found the bodies and assumed the DNA was ours. We did not submit our DNA so, that left them one assumption. That the DNA was our's." He said, "go get some rest and come back to-morrow. It is going to be a long day. Bring your books in your wagon.Are you up to the task?" I looked around the science room and looked back at hin and said, "Yes, my lord." This was a term of someone in a position of authority, usually a boss.

I took a sleep bunny to bed with me and drank a mineral bromide solution and a solution of sleep herbs. I was sleeping soundly and I was rudely awakened. The girl was gentle about trying to awaken me, but her brother was like a commander of the military. Like a drill sargent.

I was tapped on the shoulder by my comrades that once inhabited the room. The girl whispered in my ear, "Wake up sweet prince. Have you left the land of the living?" Then her brother yelled, "Hit the deck, Move it! Chow time." I did not move. I heard the snap of a currier. He yelled again, "Move it! You will be late!"

The science teacher handed me a slate, stick of chalk, inkwell, an abacus, and several other calculation instruments, quills, and a stack of papers as big as a children's book or notebook. He said, "John, this is just the first part. You only need to complete 1/6 of it today. This one part is 300 questions. It is part of a comprehensive science exam. Good luck." I asked, "Just 300 questions and it only being 1/6 of it?" He said, "Well, Doc in the clinic also had put quite a few questions in it. This is to be finished at noon. You go and get something to eat and return for another part of it" I swallowed hard and began the exam. Most of it I had learned from old books in the abandoned university library. I had to find out the hard way that I had worth and was of value.

1. What it the name of KCy?

My answer-Potassium cyanide. Cy is the cyanide part of a salt.

2. How many equivalents of each element in a protosalt?

My answer-One.

3. How many equivalents of oxygen is in a binoxide or binoxyde?

My answer-Two.

4. Can the red oxide or oxyde of iron be made without water? Explain.

My answer-Yes. It can be made by heating green copperas to red heat and cooling.

5. What is the rust of copper? What color is it?

My answer-A mixture of green copper oxide and copper carbonate. It is a bluish green color.

6. What is the rust of any metal?

My answer-These materials are formed by the action of the air. They are usually the oxide of a metal, but not always. Sometimes there is a mixture of the carbonate and oxide.

7. How many eqivalents of chlorine in a terchloride?

My answer-Three.

8. Why should a laboratory operator never grind sulphur and any chlorate?

My answer-It will explode upon formation.

9. What is the common name for iron cyanide?

My answer-Prussian blue, Turnbull's blue &c.

10. What salt is Sal ammoniac?

My answer-Sal Ammoniac (Sal Armoniac) Ammonium chloride. Sometimes used for other ammonium salts.

11. What common chemical is also called bluestone?

My answer-Copper sulphate.

12. What is the calx of cobalt

My answer-Calx of cobalt is the Grey (gray) cobalt oxide.

13. What chemical is also called green copperas?

My answer-Iron sulphate.

14. What chemical is known as white vitriol?

My answer-Zinc sulphate

15. What salt is a vitriol?

My answer-A sulphate.

16. What metal is associated with the moon?

My answer-Silver

17. What metal is associated with the planet mars?

My answer-Iron.

18. What is another name for peroxide of iron?

My answer-Rust.

19. Is peroxide of iron a true peroxide?

My answer-No, because it does not produce hydrogen peroxide in acid solutions.

20. What is vitriol of jupiter?

My answer-Tin sulphate.

21. What is the vitriol of mars?

My answer-Iron sulphate.

22. What is lunar vitriol?

My answer-Silver sulphate.

23. What is lunar caustic?

My answer-Fused silver nitrate.

24. What is an arseniuret?

My answer-An arsenide.

25. Explain how chloral hydrate is made.

My answer-By bubbling chlorine generated by a kipp's apparatus into a container of absolute alcohol. Adding calcium chloride (anhydrous) and distilling the mixture.

26. What is the chemical name of rust of copper?

28. What is a nitre?

My answer-A nitrate.

29. What is ponderous nitre?

My answer-Barium nitrate.

30. What is aether aceticus?

My answer-Ethyl acetate.

31. What is a true fulminate?

My answer-It is an oxime of silver or mercury

32. What is heavy muriatic ether?

My answer-A mixture of chloral and ethyl chloride.

33. What is light muriatic ether?

My answer-Ethyl chloride.

34. Is copper fulminate a mixed salt?

My answer-Yes, it is a mixture of copper fulminate and mercury or silver fulminate. Explodes with a green flame.

35. What is another term for rendering fat?

My answer-Trying fat. A term used in domestic science.

36. Is fat an efficient fuel for the body?

My answer-No, fats are difficult to break down in the form of beef or pork fat. If the fat is mixed into some medium like milk fat in milk then it is easier to break down.

37. How important is domestic science?

My answer-Very important. Without domestic science the people would starve, die of disease &c.. It is essentially the backbone of a nation.

38. What is meant by trying out a fat.

My answer-Rendering the fat for use in cooking.

39. What is acid of ants?

My answer-Formic acid. First obtained by distilling red ants. In fact ants taste like sour pickles.

40. What is the acid of amber?

My answer-Succinic acid.

41. How do you test an unknown powder to find out if it is a borate?

My answer-Take and pour the powder into a beaker. Add fuming sulphuric acid to it. Stir with a stirring rod and carefully pour this acid solution into alcohol. Light the mixture and if it is a borate it will burn green. This test cannot be done on copper borate because copper is used to color fireworks. It also burns green.

42 . How many true fulminates that can be prepared?

My answer-There are two true fulminates. Silver and mercury, but there are many mixed fulminates.

43 . How are these fulminates prepared?

My answer-The metals above are dissolved in fuming nitric acid. Once dissolved, the nitric acid solution is poured slowly into 90% alcohol. Mercury solution will react almost immediately, but silver is a little slower to react. Once the reaction ceases the crystals in the bottom of the container is the fulminate.

44. What is barotic nitre?

My answer-Barium nitrate.

45. What is Ponderous vitriol?

My answer-Barium sulphate.

46. What is a vitriol?

My answer-A sulphate or a salt of sulphuric acid.

47. What is a fulminating compound?

My answer-Any chemical mixture that will explode. Some will explode upon formation. Some will explode with regard to motion. &ct.

48. Why was straw added to bricks in Biblical times?

My answer-A sun baked brick is different than one fired in a kiln. A sun baked brick requires straw to hold it together. If a sun dried brick is taken to a moist environment then it will dissolve.

49. What is a nituret?

My answer-A nitride.

50. What is light carburetted hydrogen?

My answer-Methane.

51. What is heavy carburetted hydrogen?

My answer-Ethylene.

52. What is a seleniuret?

My answer-A selenide.

53. What is the common name for terchloride of carbon?

My answer-Chloroform.

54. What is another name for marine acid?

My answer-Hydrochloric acid.

55. What is the spirit of salt?

My answer-Muriatic acid, hydrochloric acid.

56. What is spirit of hartshorn?

My answer-Spirit of ammonia.

57. What is aether chloricus?

My answer-Chloroform in a solution of alcohol also known as spirit of chloroform.

58. What is nitrous ether?

My answer-Ethyl nitrite.

59. What is muriatic ether?

My answer-Ethyl chloride.

60. What is an oxyde?

Answer-Another spelling for oxide.

61. What is crocus martis

My answer-Red iron oxide.

62. What is nitric ether?

My answer-Ethyl nitrate.

63. What is sal artis?

My answer-Alembroth salt.

64. What is fire damp?

My answer-This goes by many names, but it is methane.

65.What is the acid of vitriol?

My answer-Sulphuric acid.

66. What metal is Jupiter?

My answer-Tin.

67. What metal is Venus?

My answer-Copper.

68. What metal is Luna?

My answer-Any derivative of the word luna signifies the moon or silver.

69. What is calx of the moon?

My answer-Calx lunae, calx of silver, lunar calx, silver oxide.

70. How many tides are there in 24 hours?

My answer-Two. One high tide and one low tide.

71. When are the tides the highest?

My answer-The tides in the spring are the highest, but the peak is during the time of the full moon in the spring.

72. What are crystals of the moon?

My answer-This is lunar vitriol, silver sulphate, or vitriol of the moon.

73. What metal is the moon?

My answer-Silver.

74. What is heavy inflammable air?

My answer-Carburetted hydrogen gas, methane.

75. What chemical got its name for a term meaning blue?

My answer-Cyan means blue. Cyanide.

76. What is calcic sedative salt?

My answer-Calcium borate.

77. What is urn powder?

My answer-Red iron oxide.

78. What is a neap tide?

My answer-Low tide.

79. What is an alterative?

My answer-Any drug that alters a disease process. These are also known as blood purifiers.

80. What is martial vitriol?

My answer-Iron sulphate.

81. What is ponderous earth?

My answer-Barium oxide

82. What is muriate of mars?

My answer-Iron chloride.

83. What is ammoniacal gas?

My answer-Ammonia gas.
84. What is ammoniacal lye?

My answer-A very dilute solution of ammonia or ammonium hdyroxide made by distilling chamber lye (stale urine).

85. What is the Deutoxyde of lead?

My answer-Red lead, red calx of lead.

86. What is the acid of galls?

My answer-Gallic acid.

87. What is the metal Mars?

My answer-Iron.

88. What is martial vitriol?

My answer-Iron sulphate.

89. What is light inflammable air?

My answer-Hydrogen?

90. What is vitriol of the moon?

My Answer-Silver sulphate

91. What is the acid of silkworms?

My answer-bombic acid.

92. What is a hypnotic?

My answer-Any drug which can cause sleep. Like hops, valerian, lady's slipper, and others. The chemicals that will induce sleep are the bromides and chloral hydrate.

93. What are the components of a sleep pillow?

My answer-Usually hops and marigold, but others are added to perfume the pillow.

94. What is the acid of sorrel?

My answer-Oxalic acid.

95. Which of these herbs can be used as sleep medicines?
   a. Hops
   b. Marigold
   c. Valerian
   d. Asafetida
   e. Musk root
   f. Dandelion

My answer-a, c, d, e

96. What is olefiant gas?

My answer-Ethylene, heavy carburetted hydrogen, heavy carbonrtted hydrogen.

97. What is white oxide of antimony, by nitre?

My answer-Diaphoretic antimony, ceruse of antimony.

98. What is sal acetosella?

My answer-Potassium binoxalate. potassa oxalate, potassium tetroxalate, potash oxalate.

99. What is crocus?

My answer-I assume it is not the plant. If it is the plant it is the one in which a person would get saffron or also the flowers that come up in the spring. These flowers are very pretty. Crocus in the chemical term can be red iron oxide or any red oxide of a metal.

100. What is ammonical nitrous salt?

My answer- Ammoniacal nitre, nitrate of ammoniac, ammonium nitrate.

101. What is stink damp?

My answer-Hydrogen sulphide? He wrote (Correct)

102. What are lees?

My answer-What remains in the bottom of a wine barrel or after a liquid is distilled. What remains are known as the lees.

103. What is the vitriol of tin?

My answer-Sulphate of tin.

104. What is terchloride of carbon?

My answer-Chloroform

105. What is salt of saturn?

My answer-Lead acetate, sugar of lead, acetate of lead.

106. What is salt of soda?

My answer-Sodium chloride, common salt, marine salt..

107. What is another name for terchloride of silicon?

My answer-Silicon chloroform.

108. What is salt of milk?

My answer-Lactose or sugar of milk.

109. What purpose in medicine is honey Locust?

My answer-?

His answer-It contains alkaloids that can put a person into a stupor.

110. What is an alkaloid?

My answer-A vegetable alkali. Many can form salts with acids.

111. What is an ammoniuret?

My answer-It is a combination of ammonia and a metal?

112. Are all ammoniurets explosive?

My answer-No, those of silver, gold and platinum are explosive.

113. Chose two. Which of these in your opinion would make a good cough syrup?

a. Coltsfoot
b. Chicory
c. Mullein
d. Dandelion

My answer-a and c.

114. Choose all of the stimulating or nauseating expectorants.

a. Tobacco
b. Lobelia
c. Terpin hydrate.
d. Ammonium chloride.
e. ipecac
f. Tolu balsam
g.Wild cherry

My answer-a, b, d, e

115. What is the key characteristic of a stimulant expectorant?

My answer-If too much of it is taken then you will puke.

116. What is Lapis infernalis?

My answer-Lunar caustic.

117. What is lard?

My answer-The tried out fat or rendered fat of a domestic animal such as a cow, sheep or pig.

118. What is a calx?

My answer-I assume it is not the part of a flower. A calx is any of the earthy oxides of metals. It can also denote a carbonate.

119. What is a diaphoretic?

My answer-It is any material that will make a person sweat.

120.What is the key characteristic of a sedative expectorant?

My answer-It changes the character of the congestion.

121. What is the sugar of lead?

My answer-Lead acetate

122. What is the vitriol of venus?

My answer-Copper sulphate.

123. What is wonderful salt?

My answer-Many salts can be called wonderful. In this case it is sodium sulphate.

124. What is an acid salt?

My answer-?

His answer-Any salt dissolved in water that has a sour taste.

125. What is salt of vitriol?

My answer-Purified zinc sulphate.

126. What is coniine?

My answer-This is the alkaloid from poison hemlock. The material that killed Socrates. It is used as a antispasmodic. One must take care using it because its lethal dose is very close to effective dose.

127. What is cyprian vitriol?

My answer-Copper sulphate.

128. What is magnesian borax?

My answer-I am deriving it from the words. Magnesian is magnesia and borax is a salt of boric acid. It is magnesium borate.

129. What is strontian borax?

My answer-Stroniaum borate.

130. What is ponderous sedative salt?

My answer-Boracic acid is known as sedative salt. Baryta is known as Ponderous earth. Therefore, the answer is borate of barytes.

131.What is the acid of cream of tartar?

My answer-Tartaric acid.

132. What is the blue calx of copper?

My answer-?

His answer-Mountain blue, blue carbonate of copper.

133. What is the brown calx of copper?

My answer-Red oxide of copper.

134. What is glucinia?

My answer-The oxide of glucinium or beryllium.

135. What is a boruret?

My answer-A boride.

136. What is the old term for borate?

My answer-Borax.

137. What is bone phosphate?

My answer-Terbasic phosphate of lime

138. What is martial borax?

My answer-Borate of iron.

139. What is martial sedative salt?

My answer-Iron borate.

140. What is magnesian sedative salt?

My answer-Magnesian borate, magnesium borate..

141. What is ponderous muriate?

My answer-Baryta chloride.

142. What is the sedative salt of strontian?

My answer-Strontium borate.

143. What is deutoxyde of lead and how is it made?

My answer-Sesquioxyde of lead, red lead, minim

Francis-This well-known material is made by exposing massicot to powerful heat, agitating it at the same time, that each part may in turn receive oxygen from the air with which it is in contact.

144. What is protochloride of gold?

My answer-Chloride of gold, gold monochloride.

145. How many chlorines is in the deutochloride of tungsten?

My answer-Two.

146. What is black copper?

My answer-Native copper oxide.

147. What is the common name for boruret of sodium?

My answer-Borax

148. What is the field test for borax?

My answer-Take the mineral in question. Pour alcohol and sulphuric acid on it and if it is borax then it will burn green.

149. What is tar iron?

My answer-A tar iron is a tool to remove a tar. It can also be used as a weapon like, "If you do not shut up I am going to hit you with a tar iron." All jokes aside, it is peracetate of iron, iron mordant, pyrolignite of iron, Dyer's acetate of iron, black liquor, and iron liquor.

150. How many sulphurs is in sulphide of iron?

My answer-?

His answer-Normally one.

151. What is the fluate of silver?

My answer-Silver chloride.

152. What is the Fluate of glucina?

My answer-The fluoride of beryllium.

153. What is the fluate of lime?

My answer-The fluoride of calcium.

154. What is black damp?

My answer-This is a mining term to denote carbon dioxide.

155. What color are calces?

My answer-Calces are mostly metallic substances that had undergone combustion. These can be any color.

156. What is Bismuth yellow?

My answer-It is a bismuth pigment that is known as the yellow calx of bismuth.

157. What is calx of lead?

My answer-A white pigment made from the acetate of lead. It is lead oxide.

158. How is acetic ether made?

My answer-Acetic ether is ethyl acetate.

Preparation-Take 100 parts of rectified alcohol, 63 parts of concentrated acetic acid, 17 parts of sulphuric acid of commerce. After having mixed the whole, introduce them into a tubulated glass retort, connected with a large globular receiver surrounded with cold water. On applying heat, the liquid enters into ebullition; and when 123 parts of ether have passed over, the process may be

stopped.

159. What is pear oil?

My answer-Amyl acetate.

160. What is the muriate of venus?

My answer-Copper chloride.

161. What color is the protoxide of cobalt?

My answer-Black

162. What is a boruret?

My answer-In the Princples of Chemistry. It states that it is a Boride.

163. What is a fluate?

My answer-A fluoride or fluouret.

164. What is Calx hydrargyri alba?

My answer-White precipitate of mercury.

165. Many years ago the sun looked like it was falling from the sky. Can it do so without destroying life on earth?

My answer-Commonsense dictates that the sun is a ball of hot gas. This ball of hot gas cannot get close to the earth without destroying it.

166. Where did the flat earth theory come from?

My answer-The angels stood on all four corners of the earth. This dictates it it flat and square. The Greeks knew the earth was a globe due to the eclipse of the moon and the moon itself.

167. Had water been discovered on Mars?

My answer-A scientist states that he had seen something on mars that looks like water flowing down a hill. How reliable is his data I have no idea.

168. Is boracic ether a true ether?

My answer-No. It is ethyl borate and this is analogous to ethyl chloride and others.

169. What color is cobalt borate?

My answer-Pink.

170. What is Calx bismuthi.

My answer-Subnitrate of bismuth.

171. What is Calx martis?

My answer-Crocus of iron, calx of iron, calx of mars.

172. What is the other names for Bromide of baryta?

My answer-Bromide of barium, barium bromide, bromuret of barium, barii bromidum

173. What is burnt vitriol?

My answer-The calcined sulphate of a metal. It forms the oxide.

174. What is another name for quicksilver?

My answer-Mercury..

175. What does the term "vitrum" mean?

My answer-?

His answer-It means glass.

176. Is plubago and carburet of iron the same?

My answer-Plumbago is the term for graphite. Carburet of iron would be the carbide of iron. Many chemists say they are the same, but in fact, they are not. Many say lead and graphite are the same, but they are not.

177. What is silex?

My answer-?

His answer-Silicon usually in a dioxide.

178. What does the term Acescent mean?

My answer-To turn sour.

179. What is Amomum commune?

My answer-Common ginger.

180. What are Newton's Laws of Motion?

My answer-An object at rest will remain at rest until acted upon by a force. A object in motion will remain in motion until acted upon by an equal and opposite force.

181. Why will a rock not keep rolling when the laws of motion dictate otherwise?

My answer-Friction and other forces keep the rock from rolling on forever.

182. Can a pendulum hit you in the nose if you raise it up to touch your nose and just let it go?

My answer-No, I've tried it. If it is slightly pushed then you will get hit from it.

183. What causes a small person in the circus to die quicker in the winter than an adult?

My answer-Small body mass. A midget cannot control their body temperature or regulate it very well. Someone the size of a three year old must take care and bundle up against the cold.

184. How is the borate of cobalt made?

My answer-Solutions of borax produce a pink precipitate in a solution of muriate of cobalt.

185. How would you extract coniine from common hemlock?

My answer-First, extract the hemlock with alcohol or ether. Second, evaporate in vacuum. Third, take the residue and alkalinze it and extract with ether several times. Since coniine is a liquid. It cannot be converted to a crystalline salt. It is an oil much like nicotine.

186. What is Fuchs's soluble glass?

My answer-Sodium or potassium silicate.

187. What is Abartamen?

My answer-Lead?

188. What is **Abies alba**?

My answer--Yew leaved or silver fir.

189. What is **Abies ruba**?

My answer-Ruba means red so I assume it to be the common red fir.

His answer-Correct! Studying during the times you were taken to the Normal school and the Grammar school did you good.

190. What is **Abit**?

My answer-An alchemical term for Cerussa, white oxyde of lead.

191. What is black chalk?

My answer-?

His answer-Black chalk is a blackish color and will soil the fingers and possesses an earthy texture.

192.What is Celestine?

My answer-Native sulphate of Strontian.

193. What his Morphia?

My answer-Another name for the alkaloid Morphine.

194. How did the ancient Egyptians use natron?

My answer-Create mummies.

195. What is natron?

My answer-Impure carbonate of soda.

196. What was the problem of the gum resins given to the Baby Jesus?

My answer-?

His answer-These resins were used to embalm the dead.

197. What is force?

My answer-Force is whatever causes or opposes the production of motion in matter.

198. What keeps the water from spilling out of a bucket if it is swung quickly around?

My answer-It creates its own form of gravity and that pressure keeps the water from spilling out.

199. Why do geese stretch out their necks when flying?

My answer-It cuts down the resistance of the air. It acts like a wedge.

200. What is Calx extincta?

My answer-Slacked lime.

201. Is gunpowder a chemical compound?

My answer-No, it is a mixture.

202. What is the facade of a building?

My answer-The front.

203. What is a tongue and groove?

My answer-A type of joint used in woodworking.

204. What are the other names for water?

a. Dihydrogen oxide

b. Protoxide of hydrogen

205. What are the flowers of tinstone?

My answer-Tin peroxide

206. What is another name for sublimed selenium?

My answer-Flowers of selenium.

207. What is a diaphoretic?

My answer-A medicine that will make you sweat.

208. What is a sedative expectorant?

My answer-An expectorant that changes the nature of the mucous.

209. What is Black drop?

My answer-A preparation of opium

210. What is a diuretic?

My answer-A medicine that increases the activity of the kidneys. It is what I call a pee pill or mixture.

211. What is Calx jovis, calx of tin, calx of jupiter.

My answer-Tin oxide.

212. What is mineral purple?

My answer-Gold stannate,

213. How is tannic acid ink made?

My answer-Ferric ammonium sulphate and tannin. It is black in color.

214. How is blue ink made?

My answer-Sodium or potassium ferrocyanide and ferric ammonium sulphate or some other ferric salt.

215. What is the Calx of arsenic?

My answer-Oxide of arsenic.

216. What is sulphurous acid?

My answer-Sulphuretted hydrogen in water

217. How toxic is hydrogen sulphide?

My answer-I had been poisoned by it and I cannot eat anything with even the smallest amount of sulphur. The toxicity is less than that of hydrogen cyanide, but it is still highly toxic.

218. What is Calx of cobalt?

My answer-Grey (gray) cobalt oxide.

219. What is another name for sulphuretted hydrogen?

My answer-Stink damp, hydrogen sulphide.

220. What is acid of alum?

My answer-Sulphuric acid.

221. What is acid of apples?

My answer-Malic acid.

222. What are flowers of benzoin?

My answer-Benzoic acid.

223. What is alcohol?

My answer-I assume you want ethyl or grain alcohol. It is a waste product of fermentation of sugars with yeast.

224. What percentage of alcohol can a person expect to get with normal fermentation of sugar?

My answer-Between 3 to 6%. Beyond that poiont the yeast becomes inactive.

225.What is acid of box?

My answer-Acetic acid.

226. What is acid of charcoal?

My answer-Carbonic acid gas, carbon dioxide, &c.

227.What is acid of alumen?

My answer-sulphuric acid.

228. What is carbonic ether?

My answer-Ethyl carbonate.

229. What is carbamic ether?

My answer-Ethyl carbamate? Made from urea and ethyl alcohol.

His answer-Corrrect

230. What is the vitriol of bismuth?

My answer-Bismuth sulphate.

231. What is Selenic ether?

My answer-Ethyl selenite.

232. What is the medicinal compound aether alcoholicus?

My answer-Spiritus aetheris

233, What is the use in medicine of Amyl nitrite?

My answer-It is a vasodilator and is used for this purpose.

.

234. What use in medicine lobelia?

My answer-It is a stimulating expectorant. Too much of it will make you puke.

235. What use is coltsfoot in medicine?

My answer-This is a sedative expectorant.

236. What effects do foxgloe have on the body?

My answer-It makes the heart beat slower and stronger.

237. Should mercury compounds ever be used in medicine and why?

My answer- No, the reason is all of them are poisonous to a greater or lesser degree.

238. What is citric ether?

My answer-Ethyl citrate.

239. What are oleates?

My answer-Mixture of oleic acid and some other element.

240. What is calx of zinc?

My answer-Calamine or as an illegal comic would say Cow of mine.

241. What is the protochloride of carbon?

My answer-The subchloride of carbon.

242. What is tin salt?

My answer-Protochloride of tin.

243. How far can the average person see while peering at the night sky?

My answer-About three light years

244. What is the protiodide of iron?

My answer-Iron iodide.

245. What is sulphur alcohol?

My answer-Mercaptan.

246. Aeriform What does this term mean?

My answer- Having the properties of a gas or gaseous.

Marcet-The same as elastic fluids. Having the form of air. Those which exist in this form at all common temperatures are called permanently elastic fluids. Steam and other vapors are aeriform whilst they retain the heat whcih converted them into that state; but they become liquids, or non-elastic fluids, by a reduction of their temperature.

247. What is the use of aether?

My answer-An anesthetic. This is sulphuric ether. I assume.

His answer-Correct.

248. What is Calx iodata?

My answer-Calx iodata is calcium iodide.

249.What is Calx of tin?

My answer-Calx jovis, calx of jupiter, tin oxide.

250. What is Acidum marinum, Acid of sea salt, marine acid, acid of fossil salt?

My answer-Hydrochloric acid.

251. What is vinegar of milk?

My answer-Lactic acid, galactic acid, nanceic acid, caseic acid, acid of milk.

252. What is acid of nitre?

My answer-Nitric acid.

253. What is nicotina?

My answer-The toxic alkaloid from the tobacco plant.

254. What is morphin?

My answer-Another name for morphine. The main narcotic alklaoid in opium.

255. Explain how would a person obtain lactic acid?

This has been recommended as a therapeutical agent in atonic dyspepsia, owing to its being presumed to being one of the gastric acids secreted in health. It is given either in the form of lemonade or lozenges. The acid is obtained either from milk or from the juice of the red beet. One drachm to three drachms may be taken in the twenty four hours.

This limpid, syrupy liquid, colorless or pale wine color, with a slight odor and very sour taste, is found in sour unprocessed mil, as homogenized and pasteurized milk rots. It is also found in some animal fluids, and in several vegetable juices, especially in that of beet root. It unites with bases to form lactates.

To obtain-Sugar, 6 pounds; tartaric acid, ½ ounce; boiling water, 26 pounds. Mix and set this aside for a few days, then add. Old stinking cheese, 8 ounces well diffused in 6 pounds of curdled acid skimmed milk and three pounds of chalk. Place in a warm situation, so as to keep the mixture at a temperature of 85 to 95 degrees. Stir often, in eight to ten days it will solidify into a stiff paste of lactate of lime; now add 20 pounds of boiling water, and ½ ounce of caustic lime, boil for ½ hour, and filter through linen;. Evaporate the liquid to the consistence of syrup, and set aside for four days; remove the lactate of calcium, express, agitate with one-tenth its weight of cold water, and express, repeating this operation two or three times. Now dissolve in twice its weight of boiling water, and for every pound of lactate, add three and one half ounces of sulfuric acid diluted with an equal weight of water. Filter the hot solution through a bag, and boil it with one pound and three-eighths of carbonate of zinc, for every pound of sulfuric acid, for a quarter of an hour. Filter whilst boiling hot, and allow it to crystallize; remove these crusts of lactate of zinc, and wash them with cold water. Then dissolve them in seven and one half parts of boiling water, and pass through the solution a current of sulfuretted hydrogen, till the sulfuret of zinc no longer separates. Filter and boil the liquid to expel the excess of sulfuretted hydrogen, and evaporate on a water bath to the consistence of syrup.

Preparation from milk sugar-A solution of ten ounces of milk sugar in nine pints of milk is exposed to the air in a warm place (90 to 100 degrees fahr.), and the free acid neutralized every other day with bicarbonate of sodium. When the solution ceases to become acid, the liquid is boiled and filtered and carefully evaporated to the consistence of a syrup. This is dissolved in alcohol, the sodium precipitated with sulfuric acid, the filtrate neutralized with chalk, and the clear liquid is evaporated to crystallization. The lactate of calcium is either decomposed by the exact quantity of oxalic acid, or it is converted into lactate of zinc, and this further treated as in the previous process.

256. How would a person obtain benzoic acid?

To obtain-Put coarsely triturated benzoin into an iron pot with a flat bottom, whose diameter is from 6 to 9 inches; the benzoin forming therein a layer of from 1 to 2 inches in depth. The open end of the pot is then covered with a sheet of soft and loose blotting paper, which must be attached

to the rim with paste. A cone, formed with strong and thick paper (cartridge paper), is then capped over the top of the pot, including the blotting paper, and this is attached with paste and string. The apparatus, thus prepared, should be placed on the sand bath and exposed from 4 to 6 hours to a gentle heat. After this lapse of time, it may be removed from the sand bath, inverted, and the string detached, then a mass of beautiful white needles of a silky luster, possessing the agreeable odor of benzoic acid will be found in the paper cone.

To obtain anhydrous-Add oxychloride of phosphorus to an excess of benzoate of soda; agitate together, and wash the mixture with boiling water. The anhydrous benzoic acid sinks like a heavy oil, and crystallizes upon cooling.

257. How would a person obtain acid of lemons?

To obtain-Add 4½ ounces of chalk by degrees to 4 pints of lemon juice, heated, and mix; set by, that the powder may precipitate; afterwards pour off the supernatant liquor. Wash the precipitated citrate of lime frequently with warm water; then pour upon it 27½ ounces of diluted sulfuric acid and two pints of distilled water, boil for 15 minutes; press the liquor strongly through a linen cloth and filter it. Evaporate the liquor with gentle heat, and set aside that the crystals may form. To obtain the crystals pure, dissolve them in water a second and a third time; filter each solution, evaporate and set it aside to crystallize.. The preparation of citric acid has become an important branch of chemical manufacture, from the large consumption of this article in various operations in the arts. In conducting this process some little expertness and care are necessary to insure success. The chalk employed should be dry, and in the form of a fine powder, and be added to the juice until it is completely neutralized, and the exact quantity consumed be exactly noted. The precipitated citrate of lime should be well washed with water, and the sulfuric acid diluted with 6 to 8 times its weight of water, and poured upon it while still warm, and thoroughly mixed with it. The agitation must be occasionally renewed for 8 to 10 hours, when the dilute citric acid must by poured off, and the residuum of sulfate of lime thoroughly washed with warm water, and the washings added to the dilute acid. The latter must then be poured off from the impurities that may have been deposited, and evaporated in a leaden boiler, over a naked fire, until it acquires a specific gravity of 1.13, when the process must be continued until a pellicle appears on the surface. This part of the process requires great attention and judgement, as, if not properly conducted, the whole batch may be carbonized and spoiled. At this point the evaporation must be stopped, and the concentrated solution emptied into warm and clean crystallizing vessels, set in a dry apartment, where the thermometer does not fall below temperate. At the end of 4 days the crystals will be ready to remove from the pans, when they must be well drained, redissolved in as little water as possible, and, after being allowed to stand for a few hours to deposit the impurities, again evaporated and crystallized.

258. What is sulphate of water?

My answer-Sulphuric acid.

259. What is the vitriol of water?

My answer-See above.

260.What is red chalk?

My answer- Red iron oxide, ferric oxide, red bole

261. What is binoxide of copper and how is it prepared?

My answer-Red copper oxide, Cuprous oxide, suboxide of copper,cuprite, binoxide of copper, dioxide of copper, red copper ore, red calx of copper.

Preparation-This is another preparation of this material found in an old textbook. This is the red oxide of copper, obtained by heating together in a covered crucible, 4 parts copper filings, and 5 parts black oxide of copper. Or it may be prepared in another manner. Mix 100 parts sulfate of copper with 57 parts carbonate of soda (both of these in a crystalline state) and fuse them with a gentle heat; cool and pulverize, add 25 parts fine copper filings, ram the mixture in a crucible, cover it over, and expose it for 20 minutes to a white heat. It consists of a superb red powder with a metallic luster. It is used as a pigment and a bronze, and as a stain for glass and enamel, to which it gives a rich red color. Heat converts it to the black oxide. With ammonia it forms a colorless solution, which rapidly becomes blue from the action of the air.

262. What is botryogen?

My answer-Red iron vitriol

263. What is the red calx of arsenic?

My answer- Red arsenic, arsenic disulfide, arsenicum rubrum factitium

264. What is red phosphorus?

My answer-A nonpoisonous form of phosphorus. Occurs as a red or violet powder.

265. What is Deutoxide of antimony?

My answer-Dioxide of antimony, binoxide of antimony.

266. What is fixed air?

My answer-Carbon dioxide.

267. What is choke damp?

My answer-Carbon dioxide.

268. What is hepatic air?

My answer-Sulphuretted hydrogen.

269. What is vitriol of clay?

My answer-Aluminum sulphate.

270. What is Argentic bromuret?

My answer-Bromide of silver.

271. What is Argol?

My answer-Unrefined tartar

272. What are other names for Arsenic bisulphide?

My answer-Red orpiment, realgar, arsenic disulphide.

273. What is Terchloride of arsenic?

My answer-Trichloride of arsenic

274. What is other names for Arsenicum album?

My answer-Oxyde, or calx of arsenic, ratsbane, arsenous acid, arsenii oxydum sublimatum, arsenici oxydum praepatatum, white arsenic.

275. What is Vitriol of clay?

My answer- Aluminous vitriol, vitriol of alumine, aluminum sulphate

276. What is chloroform of silex?

My answer-Silicon chloroform

277. What is Vitriol of the moon?

My answer-Silver sulphate.

278. What is another name for deutacetate of copper?

My answer-Vertigris.

279. What color is the deutacetate of copper?

My answer-Green.

280. Which of these plants can be used for nervous conditions?

a. Valerian
b. Coltsfoot
c. Life everlasting.
d. Yellow lady's slipper.
e. Lobelia

My answer-a, c, d.

281. Which of these alkaloids or alkaloidal mixtures can be used as an antispasmodic?

a. Napelline (a mixture of four alkaloids).
b. Coniine.
c. Nicotine
d. Strychnine

My answer-Coniine and nicotine. Both of the same pharmacological family.

282. What is Oleone?

My answer--Is a liquid product obtained by distilling oleic acid with lime

283. What is Oleatum hydrargyri?

My answer-?

His answer-Oleate of mercury. Mercurial ointment. Used for skin conditions.

284. What is the term Oleum mean?

My answer-Fat or oil.

285. What is prussine?

My answer-Cyanogen.

286. What is another name for pineapple oil?

My answer-Butyric ether, ethyl butyrate

287. What is Oleum adipis?

My answer-Oil of lard

288. In medicine, when a stimulating expectorant is need in a cough syrup. None of the safer plants are not available then what could be used in their stead?

My answer-Tobacco, but one must be careful because in high doses it is poison.

289. In medicine, a person is having difficulty in sleeping. What mixture of alkaloids can be safely used?

My answer-Napelline is a mixture of four alkaloids. It can be safely given.

290. What is oxygen ether?

My answer-Acetal.

291. What field method would you use to prepare copper sulphate or blue vitriol if sulphuric acid was not available?

My answer-An acid sulphate can be used and also the rust of copper.

292. What is an alterative?

My answer-Any agent that alters the nature and composition of the blood.

293. How to you change or convert Troy ounces to metric?

My answer-Multiply the Troy ounces by 31.1.

294. How do you convert metric grams to Troy ounces?

My answer- Multiply grams by 0.032.

295. What is a Mel?

My answer-Medicinal honey.

296. What is an Aceta?

My answer-Medicinal vinegar.

297. What is flake lead

My ansswer-Basic lead carbonate.

298. What are flowers of antimony?

My answer-Antimony oxide.

299. What is Fluoboric acid

My answer-Terfluoride of boron.

300. What is Fluoric ether?

My answer-ethyl fluoride.

This one test was done. The science teacher said, "Go and get some chow. You skipped dinner to work on this one test. There is another part of this test waiting for you tomorrow.

It seemed like forever that I was taking tests. Small books that contained questions of every type. I came back from the chow line and another small book was on my Peabody desk. I went to his office and asked, "another 600 questions?" He said, "No, Just a few in this one, get to work. Some basic math in this one. Mostly ratios and percentages." I finished that test in record time. I left and went out to the garden.

I went back into the classroom and I asked him,"is this the entire test or is there some more?" He said, "Glad you asked. Dr. Underwood in the clinic said you worked for him. He said he had to skin you several times for not being safe in his office. The next section is extraction of alkaloids. He said you had done it so many times, you can do it in your sleep. I allowed you to let this test slide. Ready? You have had a tough few weeks. Clear your head. The rest of the written test is on alkaloids, resinoids, glycosides, &c."

I walked in and several pieces of laboratory apparatus was on the table. Marked 1, 2, 3, 4, 5, 6, 7, and so on. He said, "This mission if you choose to accept it is to name all these pieces of laboratory apparatus and the parts marked."

1. Common worm still. The condenser is a Graham's condenser. Apparatus is made of glass and metal. In this case it is a copper still. It would be dangerous to produce acids in this still.

2. Kipp's apparatus. Used to produce gases such as hydrochloric acid gas, hydrogen sulphide, hydrogen and so on. The solid is put in the bottom vessel and the solution in the top vessel. The flow is controlled by the stopcock.

3. Woulff's apparatus. Also known as woulff's washing bottles.

4. A beaker.

5. Test tube stand.

6. Ring stand

7. Static electricity generator.

8. Test Tubes of various sizes.

9. An alcohol lamp.

10. A blowpipe

11. a watchglass.

12. A vacuum flask.

13. A glass perfume still. Used to distill essential oils.

14. A spectroscope.

15. A bladder used to concentrate alcohol. It is made of a pig's bladder.

16. A pair of leather gloves. Used to pick up hot objects. Also working with electricity.

17. Crucibles. Used to calcine metal ores and other purposes using intense heat.

Finally the entire written exam was over. The teacher said, "Go get something to eat and go to bed. We've had to almost drag you to the chow line and force you to get some sleep. You've had a long two months. You've worked 12 hours a day for two months." I turned and said, "Will do. Anything else?" He asked, "How did you become so smart in the older chemistry?" I said, "Remember when they had me going to the schools and homes as punishment for trying to kill myself?" He said, "Yes, I remember. You used your size as an advantage to try. That does not answer my question." I turned and said,"When I had to go to the schools. I took a wagonload of books with me." He asked, "You mean that children's wagon was full of books?" I said, "Yeah. I read a story once that a child lost his parents. He wanted to be educated. I mean an education like the Prince would get. The whipping boy ran off because he had had enough. The kid was literate and a Duke's son. He walked up to the Prince and spit into his face. The child was immediately arrested and sentenced to being the Prince's whippingboy. Lesson of the story. If a person wants an education badly enough nothing can stop you. If you do not want an education no one can help you."

This was my first time teaching after taking my comprehensive examinations. These were so difficult that I figured I had not passed them. The first part was chemical nomenclature, some simple syntheses and general science. This was not modern chemical nomenclature, but Victorian

on back into the foggy depths of alchemy. Sure, I had read many older industrial chemistry books, but this comprehensive exam was as large as a small book. I guessed it was about 1000 questions. All I knew was I did not look at the numbers. This test took approximately a month to complete. The next part was chemical apparatus and its uses. Like the use of a kipp's apparatus, woulff's apparatus and so on. It actually had pictures of the pieces. These were laid out on the laboratory table.

The teacher came in Monday morning to his classroom. He said, "You passed the lab equipment and science parts. of the test. Tonight, we celebrate. He brought in a bottle of fresh distilled apple brandy. This is hard cider. He said, "The last part will be the laboratory section. It will take a month to complete." I said, "At the risk of both of us being ponied? That stuff we will all be drunk." He said, "Isaac will be at the celebration, Nothing will happen." Those are the most famous last words. I've heard that before. I began to drink teaspoons of the distilled liquor because I remembered drinking plain cider. Plain cider is not apple juice. It is a fermented beverage that fizzes like soda pop and contains 5 to 6% alcohol. I was thoroughly drunk from one bottle. The next morning I felt like someone had totally skinned me alive.

Two girls happened to barge into the room. They gave us a funny look and left. They came back with several others and with papers for us to appear before the student court. I said, "Nothing will happen, huh? All of us that attended this celebration is going to be ponied. I know it. I studied for this test when I was sent to the Normal school and the elementary school and several residences." He asked, "What was the matter? Being punished?" I said, "Yeah, Isaac put me on trial for trying to kill myself by mother nature. Almost froze to death five times. Went out in a winter thunderstorm. Never got struck. Isaac warned me what would happen if he told the students about it. It was like the crime of the century." He began to laugh about it. He said, "I missed the trial. Relative was sick. I had to plan their funeral." I said, "Being jerked out of your seat when in deep thought is not pleasant." He said, "were you, umm." I said, "Not often, Isaac said obey them. Don't complain because you put yourself in the situation. Do be polite. Turn on what charm you have. The girls were worse than the boys about dealing it out." He asked, "How, so?" I said, "The girls were not afraid to cause pain for some queer reason. I heard one mention her mother would have her do it to her little brother. If it had anything to do with that, I don't know."

He said, "you passed your tests. We can arrange that you can earn a PhD in general science. I am a professor or a PhD and I can also give them out. Would you like to do it?" I asked, "What would I need to do?" He replied, "Write a dessertation. Up for the challenge?" I looked at him in the eye and laid a pair of white gloves on the table. He said, "You are accepting the challenge. Am I correct?" I replied, "Challenge accepted. When do we begin?"